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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,752	03/20/2001	Maarten Koning	11283/30	8895
30636	7590	10/19/2004	EXAMINER	
FAY KAPLUN & MARCIN, LLP 150 BROADWAY, SUITE 702 NEW YORK, NY 10038			MYERS, PAUL R	
			ART UNIT	PAPER NUMBER
			2112	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/812,752	KONING ET AL.	
	Examiner	Art Unit	
	Paul R. Myers	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-21, 31, 33 and 34 is/are allowed.
- 6) ☒ Claim(s) 1-11, 22-28 and 30 is/are rejected.
- 7) ☒ Claim(s) 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-21, 23-34 have been considered but are moot in view of the new ground(s) of rejection.

In regards to applicants argument that AAPA does not teach the newly added feature of the task still holding the at least one resource wherein the resource is not involved in the priority inheritance.

In regards to applicants argument in respect to claims 22, 28, 30 and assumedly claim 24: The examiner note there is no language in these claims that indicates the lower priority task holds resources that are not involved in blocking the higher priority task.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Kosche et al PN 5,937,187.

In regards to claims 1 and 32: AAPA teaches a method comprising: testing (mutual exclusion control; page 4) a priority inheritance variable associated with a task (e.g. counter variable; page 4); and lowering a current priority of the task when testing the priority inheritance variable indicates that the task holds no resourced that are involved in a priority inheritance

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(page 4, lines 28-30). AAPA is silent on how priority inheritance is handled when the task holds a resource that is not involved in the priority inheritance. Kosche et al teaches “userland” resources in which resources that are not identified as holding/blocking threads then standard preemption is performed (Column 3 lines 53-65). It would have been obvious to use standard preemption in the case that the resource is non-blocking because the resource is not required for the higher priority task thus allowing the preemption, thus maintaining priority order.

In regards to claim 2: AAPA teaches the priority inheritance variable is configured to have a value indicative of the number of resources held by the task that higher priority tasks are waiting to receive (page 4, lines 23-33).

In regards to claim 3: AAPA teaches raising the current priority of the task when a higher priority task blocks on a resource held by the task (Page 4 lines 17-20).

In regards to claim 4: AAPA teaches raising the current priority of the task when the higher priority task blocks on the resource held by the task, the current priority of the higher priority task that blocked on the resource held by the task (page 4-5).

In regards to claim 5: AAPA teaches adjusting the priority inheritance variable when a higher priority task blocks on a resource held by the task (page 4 lines 25-26).

In regards to claim 6: AAPA teaches the priority inheritance variable is incremented.

In regards to claim 7: AAPA teaches adjusting the priority inheritance variable when the higher priority task is deleted (page 4 lines 26-28).

In regards to claim 8: AAPA teaches adjusting the priority inheritance variable when the higher priority task times out (Page 3 lines 32 to Page 4).

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In regards to claim 9: AAPA teaches adjusting the priority inheritance variable when a task releases a resource (Page 4 lines 26-28).

In regards to claim 10: AAPA teaches the priority inheritance variable is decremented (Page 4 line 27).

In regards to claim 11: AAPA teaches the priority inheritance variable is included in a task control block associated with the task (page 4 lines 23-25).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 22-28 and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's Admitted Prior Art.

In regards to claims 22, 24: AAPA teaches a system comprising: a task; a priority inheritance variable (e.g. counter variable; page 4 line 30), the priority inheritance variable associated with the task and configured to indicate the number of resources that are held by the task and that at least one higher priority task is blocked on (page 4 lines 18-33); and a mutual exclusion control mechanism (page 4 line 18) configured to set a current priority of the task to a base priority value when the priority inheritance variable indicates that no higher priority tasks are blocked on resources held by the task (page 4 lines 28-30).

In regards to claims 23 and 25: AAPA teaches the mutual exclusion control mechanism is configured to increase the current priority of the task when a higher priority task blocks on a resource held by the task (page 4 lines 17-20).

In regards to claim 26: AAPA teaches a system comprising: a semaphore (e.g. mutual exclusion control mechanism; pages 1 and 4); and a variable (e.g. variables) the variable associated with the semaphore and configured to indicate whether a pending request for the semaphore has resulted in a priority inheritance (page 4 line 15 to page 5 line 9).

In regards to claim 27: AAPA teaches a semaphore control data structure (Page 4), the semaphore control data structure associated with the semaphore and including the variable (Page 4 lines 17-33).

In regards to claim 28: AAPA teaches a task; a priority inheritance variable (e.g. counter variable) associated with the task; and a mutual exclusion control mechanism (page 4 lines 17-20) configured to adjust the priority inheritance variable when the task releases the semaphore only if the variable indicates that a pending request for the semaphore has resulted in a priority inheritance (page 4 lines 17-33).

In regards to claim 30: AAPA teaches a method comprising: tracking a number of resources held by a task that higher priority tasks are presently blocked on (page 4 lines 25-26), the tracking using only a predetermined amount of memory (page 4 lines 31-32); raising a current priority of the task when a higher priority task blocks on a resource held by the task (page 4 lines 19-20); and setting the current priority of the task to a base priority value whenever no higher priority tasks are waiting to receive any of the resources held by the task and the task still holds at least one resource (page 4).

Allowable Subject Matter

6. Claims 12-21, 31, 33-34 allowed.
7. Claim 29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter:
Applicants arguments with regards to claims 12 and 13 are persuasive. With regards to claim 21 the examiner notes Kosche et al teaches standard preemption when the task holds a resource that is not involved in any holding/blocking. However the claim language of claim 21 would require the resource to be capable of being a blocking resource just only blocking on a second mutual exclusion semaphore.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul R. Myers whose telephone number is 703 305 9656. The examiner can normally be reached on Mon-Thur 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 703 305 4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PRM
October 18, 2004



PAUL R. MYERS
PRIMARY EXAMINER